

MARCH 14, 1921

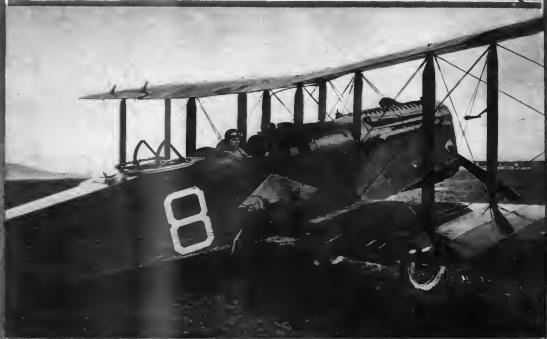
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AVIATION AND AIRCRAFT JOURNAL



Lieut. W. D. Coney, Who Made a One-Stop Trans-America Flight

Photo by E. A. Arnes, Air Service

VOLUME X
Number 11

SPECIAL FEATURES

BATTLESHIPS TO BE BOMBED
SAN FRANCISCO TO NEW YORK IN 33 HR. 20 MIN.
SAFETY IN AVIATION
BIDS FOR MB-3 PURSUIT AIRPLANES
TWO-SEATER AVRO BABY, TYPE 543

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VOL. X, NO. 11

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AVIATION AND AIRCRAFT JOURNAL

Vol. 2

MARCH 24, 1932

No. 31

President Harding

ON the eve of his inauguration President Harding made an announcement to the press which is of the greatest importance to aviation in this country. He is reported as favoring the creation of a Department of Defense, headed by one Cabinet officer, which would have three divisions of virtually equal rank, the army, the navy and the air force. Each would be in charge of its tasks.

This news, while hidden in an obscure newspaper report, is cheering to all those who believe that the present method of handling governmental air activities is unsatisfactory.

The British Ministry of defense has followed that plan but none of the practical workings of it have passed through the experience of all new experiments. Practically, the idea is sound. Speed, precision and cooperation have no place in any scheme for national defense. By placing the air force on an equal plane with the army and navy, President Harding will be starting right and it is to be hoped that this consideration will prove one of the great achievements of the Harding Administration.

Fast Transcontinental Flights

THE two recent transcontinental flights made by the Air Mail Service and the Army Air Service, respectively, furnish striking instances of the possibilities aircraft will offer once their use is fully developed. In the one instance, United States airmen were carried by means of a perfectly functioning relay system and the significance of eight flying was a distance of 2,650 miles in 23 hr 28 min of elapsed time. In the other case no Army aviator around the United States from Southern California to Florida with a single stop enroute, covering a distance of 2,180 miles in 22½ hr flying time. That is but about 14 hr at the intermediate stopping point does not in the least reduce the value of the performance, but of course that time was responsible for it.

The services which were responsible for these great performances are to be warmly congratulated. Men and machines alike stand the trying tests admirably well. Extended night flying by airplane navigation was proved to have emerged from the experimental stage. Mail pilot Knight followed a course by night he had never flown at day time and arrived at his destination without much difficulty. What enhances his feat is that he made an intermediate landing, on schedule, on a field illuminated by flood lights, from which he again took off without much aid. The lengthy experiments of Air Mail pilots with landing and taking off by night have evidently borne fruit.

Lieutenant Conroy, on the other hand, duplicated his first night flight—which was scheduled—by covering the second leg of his flight by night also, which was not foreseen in his schedule.

Thus, these remarkable demonstrations of night flying under conditions of service tests and under different circumstances

were furnished by Air Mail and Army pilots. They emphasize with particular force the ever growing possibility of aircraft for war and peace, and the expenditure stretching in distances their advent periods.

Tank and Rescue Airplanes

THE trans-American flight of Lieut. William D. Coney suggests the desirability of a new development by the Air Service. This is the construction of special tank airplanes, similar in purpose to the float tankers of the Navy.

It is either chosen for an airplane to cover a thousand miles in seven or eight hours and then be forced to lose valuable time, sometimes days, sitting in a pasture because high grade gasoline and oil tanks rapidly used means of transit. The development of tank airplanes, independent of special fire protection, therefore means a logical step forward in the progress of aviation. They are should prove of benefit to the Army Air Service, for it will tend to reduce the number of aircraft assembled in out-of-the-way places enroute to tank of fuel.

Another type of airplane that might be worth while development is the repair machine. This would carry a certain number of "first aid" spares, such as wheels, tires, shafts, clutches, propellers, piston rings, valve springs, etc. Its appearance would certainly be welcomed by pilots forced to make a landing for a minor engine defect which is not adjustable with the means carried on board. It would be specially valuable in cases where an emergency landing delayed the undercarriage or where the machine could not, breaking the propeller.

Japanese Aircraft Progress

THAT Japan has been developing aviation for her Army and Navy is well known. The tendency is toward British practice in regard to naval aviation and French methods for airplanes in the air. The Evening Standard of London has printed the following news which should be of interest to our government—

"Exceptional interest is being displayed by the Japanese in the development of commercial aviation. Substantial orders, it is well-known, have been placed in this country for British airplane engines and parts used for flying boats of British construction."

"Manufacturers of airplanes and their accessories are going out for the purpose of opening up business with the Japanese, whose ultimate object is to establish land and coast routes for commercial purposes in various parts of the Eastern Empire."

As it is generally conceded that the remaining records for the air force of any country will eventually come from its commercial pilots and that the country having the strongest commercial air development will be the best prepared in an emergency, too much information cannot be secured regarding the air transport activities of other countries.

Battleships to Be Bombed

Leading arguments with the radio-controlled battleship fleet and with the six German submarines, stationed in the United States, as targets will be conducted by Army and Navy forces jointly, according to an announcement made by Secretary Daniels. In addition to announce that one of the later type of the obsolete battleships, probably the Kentucky, will be turned over to the Army three for experiments in developing tactics of shore naval attacks on warships, by land planes.

Several months ago the Navy Department, under instructions from the Secretary, began working out plans for experiments

2. The probability of hitting with bombs from airplanes, a naval target and capable of maneuvering, but incapable of successful defense.

3. The chances of vessels of comparative second design which will result from life with bombs of various types and weights. The vessels to be attacked by bombing are of the battleship, light cruiser, destroyer and submarine types.

(4) That these experiments carried out in sea in deep water will demonstrate the effect of an airplane bombardment of naval craft more effectively than experiments conducted with the vessels at anchor in shallow water.

(5) That the experiments authorized by the War Department do not contemplate experiments in the use of wireless guns, second personnel in exposed positions nor the effect of gas, incendiary, and smoke bombs.

(6) That the tactics to be used in attacking naval vessels by aircraft are not well developed.

2. The Joint Board therefore recommends:

(a) That, the Navy Department invite the War Department to authorize the Army, Air Service to participate in the attack, demonstration and bombing experiments to be carried out by units of the Naval Air Service under direction of the Commander in Chief, U. S. Atlantic Fleet as directed by letters (attached) of the Secretary of the Army, with the understanding that nothing occurred in these instructions shall be construed to prevent the Army Air units from making at least two hits with the largest type of bombs that may be available.

(b) That, referring to reference (b) (letter of Secretary of Navy to Commander in Chief, U. S. Atlantic Fleet on subject—*Destruction of Enemy Shipping in Contingency of U. S. Navy*, the Navy Department turn over to the War Department an obsolete battleship fitted with at least one eye main, to be employed for the purpose of developing the tactics of aircraft in attacking naval vessels, experimenting with gas, incendiary and smoke bombs, and for the development of any type of bombs to be used against naval vessels. The rules and regulations for these experiments to be prescribed by the War Department, but no report of casualties as to the probable damage to personnel or equipment or probably of actual damage to the vessel—right integrity of the target vessel or vessels in general shall be made except by a board in which the Navy shall have representation. In case such a report is required by the War Department, the Navy Department to acquiesce in damage and make naval officers as its representatives on the Board. The War Department to invite the Navy Department to authorize the Naval Air Service to participate in these experiments.

(c) That the results of these experiments and the conclusions drawn therefrom be held secret by the War and Navy Departments until passed upon by the Joint Board, and that all efforts concerned in making these experiments be maintained accordingly.

Full Plan of Operations

The full plan for the experiments to be conducted by the Army and Navy three using the foreign German warships at targets, and the plans for the experiments with the radio-controlled fleet to determine the present value of aircraft operating from shore bases against naval vessels, established by aircraft follow:

In order to determine the maximum effectiveness of aircraft of heavy-duty or type in the present state of development when conducting operations against surface vessels battleships, light cruisers, destroyers, submarines, and other vessels, the plan for the experiments will be carried out under the direction of the Commander in Chief, Atlantic Fleet by all available units of the Air Force, and other units of the Atlantic Fleet, and under the direction of the Secretary of the Army, War Department. The experiments shall be commenced as soon as possible after June 1, 1925, and shall be completed before July 15, 1925.

In preparing this order, the Department has been guided by the following considerations:

(1) Successful attack without losses (losses of personnel of war and naval vessels and transports, and losses of vessels of successful in enemy vessels. The combination of trials during war, for most nations, a necessity. A blockade against the foreign commerce of a nation, and a navy, may be a strong naval force, be made effective without a close approach to the enemy coast.

(2) Success in attacking naval vessels by aircraft and submarines will be secured with sub-aircraft batteries.

(3) Landing operations by aircraft on the coast of a first class power are, in these days of large armies, rapid transport, and effective mobile units, before, presently possible, only the control of the sea is gained and the morale and military strength of the enemy nation seriously reduced by a blockade, or other devices.

(4) Landing operations in the coastal waters of an enemy nation will be required to suppress resistance traffic. This type of operation will usually be conducted by submarines, destroyers, or fast cruisers.

(5) It is in defense against operations of this last type by naval vessels that shore based aviation will be the most effectively employed. The experiments should therefore be made, in suitable attacks by aircraft on vessels conducting operations of this nature.

(6) Operations against naval vessels operating in the coastal waters from the coast of the effectiveness of aircraft, divide logically into three phases:

(a) The location of such naval units.

(b) The ability of the aircraft to hit vessels with their projectiles.

(c) The ability of the projectiles to seriously damage a vessel.

3. In view of the above the experiments shall be conducted in three phases:

(a) The location by aircraft of naval vessels operating in a near off the coast and after the location of such vessels the concentration of individual aircraft for effective bombing operations against such vessels.

(b) Actual bombing tests from the aircraft so concentrated, in an attempt to obtain data, from and might against the U. S. Navy, destroyers of her highest probable speed and interior range under radio control. These tests are for the purpose of determining the accuracy with which bombs can be dropped over the sea.

(c) Actual tests with live bombs from aircraft against enemy as war vessels which are to be destroyed. These tests shall be carried out in accordance with instructions contained in letter of Secretary of the Navy, of February, 1925.

The Department desires that the tests set forth in paragraph 3 (a) and (b) should be carried out in general along the Atlantic coast, and the Commander in Chief to arrange all details.

The aircraft will simulate a search phase and a surprise attack by a squadron or squadrons of bombing planes on a division of vessels.

The exercise will be carried out with such aircraft and personnel as the Commander in Chief can assemble from the Atlantic Fleet Air Force and the other detachments assigned to his command for his purpose.

The exercise will be held in the open sea during daylight in good weather. The target will consist of coast battleships No. 4, ex U. S. Navy, under radio control.

The number of aircraft, of maximum number of hits will be determined by the Commander in Chief, but will maintain actual service conditions as nearly as possible. The maximum aircraft will be 1,000 ft. The speed of aircraft throughout the exercise will be such as to simulate strategic flight.

All aircraft will be fully equipped for service conditions, including radio equipment, communications and ammunition, and the personnel to operate them.

The exercise will be carried out in the area of Chesapeake for each type of plane. The total number of bombs dropped will depend on the carrying capacity of the aircraft and the number of aircraft available.

The exercise will be carried out in the area of Chesapeake at which the exercise will begin. This time will be the new hour.

At the noon hour the coast battleship No. 4 will be at a point within a mile between 36 and 38 miles off the Coast

between Cape Hatteras and Cape Hatteras and from that time until the exercise is delivered will stream at a minimum probable speed and on any course in the general direction of the shore. Doctrine to avoid bombs should govern its maneuvers as nearly as possible, other plans are optional. The position of the fleet will be indicated to the bombing squadron.

At the noon hour the bombing squadron and each other planes as are necessary for reconnaissance purposes will be at the same time in all respects ready to proceed to the attack. The attack will be delivered at an earliest possible time after the noon hour.

5. The Commander in Chief will issue necessary detailed instructions and will appoint a Board of Observers to observe and make detailed report of the exercise. He will also detail the necessary observing ships.

The position of all boats dropped will be plotted as ac-



THE LANDING AND FLYING OFF DECK OF THE NEW BATTLESHIP "MAINE" (BB-3).

curately as possible using the bombing rules. In addition to any other subject of interest, the board will submit data on the following subjects:

- (1) Standard time of zero hour.
- (2) Standard time at which position of target was determined by air force.
- (3) Standard time at which bombing squadron was sighted.
- (4) Number and type of bombs carried by each plane.
- (5) Number of planes making the attack.
- (6) Time at which last bomb was dropped.
- (7) Time at which last bomb was dropped.
- (8) Total number of bombs dropped.
- (9) Attacks at which bombs were dropped.
- (10) Status of bombing formations.
- (11) Plot of fall of all bombs.
- (12) Chronological report by Commanding Officer, Bombing Squadron.
- (13) Photographs of destruction of aircraft by surface vessels after conditions dictated by the attack.
- (14) Probability of increasing liability of hits by bombs by maneuvering of ship.



CAPT. T. T. CRAVEN, U. S. N., DIRECTOR OF NAVAL AVIATION 1920 to MARCH 1, 1925.

the experiments to determine the effectiveness of aircraft against surface vessels.

On Feb. 7, Secretary Daniels wrote the Joint Army and Navy Board suggesting that the other experiments that were to be carried out, should be made jointly by the Army and Navy and making the board to investigate and make recommendations.

The following recommendations were submitted as a consequence on March 1 by the Joint Board to the Secretary of the Navy and approved by him.

"After careful consideration and study of the bombing experiments already conducted by the Navy Department, and consultation with the Army (Chief of the Army, Air Service) and the Director of Naval Aviation, the Joint Board has reached the following conclusions:

(a) That the bombing experiments conducted in the exercises to be conducted by the Navy are designed to determine:

1. The ability of aircraft to locate vessels operating in the coastal zone and to concentrate on such vessels sufficient bombing airplanes to make an effective attack.

Bids for MB-3 Pursuit Airplanes and Spares

When, during a recent hearing on the Army appropriation bill Brig. Gen. William Mitchell stated that the United States now had an American pursuit airplane equal in performance to any foreign machine, he alluded to the Thomas-Morse MB-3, which with a 300 hp. Wright engine was second place in the Pulitzer Trophy Race on Thurs-

giving Day and over a measured course established an average speed of 170½ miles per hour. To supply the Army Air Service's absolute lack of Pursuit machines the Engineering Division at McCook Field called for bids on the MB-3 in lots of 50, 100, 150 and 300 machines with necessary spares in each case. These bids were opened February 21. Fourteen manufacturers have submitted bids on 50 machines while nine of the same manufacturers have bid on each of the lots of 100, 150 and 300 machines. These bids disclose that the average total price on 50 machines with spares is \$639,574.24; while the average total price on 300 machines is \$1,945,983.23.

	Unit Price	50 Total	Grand Total	Unit Price	100 Total	Grand Total
(4) AEROMOTOR PLANE AND MOTOR CO. Kew-Forest, N. J.	\$11,000.00 spares 50,000.00	\$62,000.00 26,000.00	\$88,000.00	\$ 9,547.00 spares 240,000.00	\$ 94,700.00 40,042,00.00	
	Deliveries completed in 6 months.			Deliveries completed in 7 months.		
(5) BEECHER AIRCRAFT CORP. BETHLEHEM, PA.	\$13,100.00 spares 75,000.00	\$88,100.00 \$68,100.00				
	Deliveries completed in 8½ months.					
BURNS AIRCRAFT CO. Baltimore, Md.	\$50,125.00 spares 45,245.45	\$95,370.45		\$ 50.00 spares 77,700.45	\$ 50,100.00 \$ 208,700.45	
	Deliveries completed in 9 months.			Deliveries completed in 12 months.		
CURTIS AIRCRAFT AND MOTOR CORP. Gloucester City, N. Y.	\$10,007.00 spares 55,165.80	\$65,172.80		\$10,000.00 spares 55,165.80	\$65,165.80	
	Deliveries completed in 11 months.			Deliveries completed in 11 months.		
DAYTON WRIGHT CO. Dayton, Ohio	\$12,288.00 spares 71,800.00	\$84,088.00		\$11,000.00 spares 71,800.00	\$82,800.00	
	Deliveries completed in 11 months.			Deliveries completed in 14 months.		
(1) EMERSON ENGINE PRODUCTS CO. Buffalo, N. Y.	\$10,100.00 spares 45,350.00	\$55,450.00		\$ 5,000.00 spares 80,000.00	\$ 85,000.00	
	Deliveries completed in 6 months.			Deliveries completed in 10 months.		
(4) G. E. BENTLEY AND SONS Boston, N. Y.	\$12,000.00 spares 65,000.00	\$77,000.00		\$12,000.00 spares 70,000.00	\$82,000.00	
	Deliveries completed in 10 months.			Deliveries completed in 10 months.		
GALLAGHER AIRCRAFT CORP. East Greenburgh, N. Y.	\$10,000.00 spares 65,700.00	\$75,700.00				
	Deliveries completed in 10 months.					
L. W. F. ENGINEERING CORP. Columbia Point, N. Y.	\$ 8,000.00 spares 87,175.00	\$95,175.00		\$ 8,000.00 spares 100,000.00	\$108,000.00	
	Deliveries completed in 9 months.			Deliveries completed in 7 months.		
(4) LAMSON AIRCRAFT CO. Troy, N. Y.	\$ 8,150.00 spares 80,154.12	\$88,304.12				
	Deliveries completed in 9 months.					
LAWRENCE SECURITY AIRCRAFT CO. Farmingdale, N. Y.	\$ 8,950.00 spares 50,750.00	\$59,700.00				
	Deliveries completed in 8 months.					
THOMAS-MORSE AIRCRAFT CORP. Troy, N. Y.	\$10,800.00 spares 54,360.00	\$65,160.00		\$ 9,000.00 spares 91,200.00	\$100,200.00	
	Deliveries completed in 5 months.			Deliveries completed in 8½ months.		
(4) WETHERS AIRCRAFT MFG. CO. Yonkers, Cal.	\$ 1,240.00 spares 33,500.00	\$34,740.00		\$ 1,250.00 spares 78,000.00	\$79,250.00	
	Deliveries completed in 6 months.			Deliveries completed in 9 months.		
WITTEBORN-LAWSON AIRCRAFT CO. Hawthorne, N. J.	\$17,000.00 spares 164,300.25	\$181,300.25				
	Deliveries completed in 13 months.					

	Unit Price	50 Total	Grand Total	Unit Price	100 Total	Grand Total
(4) AEROMOTOR PLANE AND MOTOR CO. Kew-Forest, N. J.	\$ 8,575.00 spares 132,600.00	\$141,175.00		\$ 8,144.00 spares 203,212.00	\$211,356.00	
	Deliveries completed in 8 months.			Deliveries completed in 10 months.		
(4) BEECHER AIRCRAFT CORP. BETHLEHEM, PA.						
BURNS AIRCRAFT CO. Baltimore, Md.	\$ 7,200.00 spares 154,371.77	\$161,571.77		\$ 7,047.00 spares 125,445.07	\$132,492.07	
	Deliveries completed in 14 months.			Deliveries completed in 15 months.		
CURTIS AIRCRAFT AND MOTOR CORP. Gloucester City, N. Y.	\$ 8,604.00 spares 143,250.00	\$151,854.00		\$ 8,000.00 spares 130,500.00	\$138,500.00	
	Deliveries completed in 11 months.			Deliveries completed in 13 months.		
DAYTON WRIGHT CO. Dayton, Ohio	\$10,454.00 spares 130,100.00	\$140,554.00		\$ 9,820.00 spares 130,000.00	\$139,820.00	
	Deliveries completed in 14 months.			Deliveries completed in 15 months.		
(1) EMERSON ENGINE PRODUCTS CO. Buffalo, N. Y.	\$ 7,000.00 spares 158,100.00	\$165,100.00		\$ 6,500.00 spares 165,000.00	\$171,500.00	
	Deliveries completed in 12 months.			Deliveries completed in 14 months.		
(4) G. E. BENTLEY AND SONS Boston, N. Y.	\$12,700.00 spares 130,000.00	\$142,700.00		\$13,000.00 spares 130,000.00	\$143,000.00	
	Deliveries completed in 21 months.			Deliveries completed in 19 months.		
GALLAGHER AIRCRAFT CORP. East Greenburgh, N. Y.						
L. W. F. ENGINEERING CORP. Columbia Point, N. Y.	\$ 8,200.00 spares 204,372.00	\$212,572.00		\$ 8,187.00 spares 204,305.00	\$212,492.00	
	Deliveries completed in 7 months.			Deliveries completed in 8 months.		
THOMAS-MORSE AIRCRAFT CORP. Troy, N. Y.	\$ 8,025.00 spares 134,694.00	\$142,719.00		\$ 7,000.00 spares 173,450.00	\$180,450.00	
	Deliveries completed in 10½ months.			Deliveries completed in 12 months.		
(4) WETHERS AIRCRAFT MFG. CO. Yonkers, Cal.	\$ 1,775.00 spares 163,000.00	\$164,775.00		\$ 1,700.00 spares 130,000.00	\$131,700.00	
	Deliveries completed in 12 months.			Deliveries completed in 15 months.		

(4) Prices adjusted to include credits, not included in bid.
(5) 2-month 1 per cent—10 days; 1 per cent—10 days; 1 per cent—10 days.
(6) Prices adjusted to include credits, not included in bid.
(7) 2-month 1½ per cent—10 days; 1 per cent—10 days; 1 per cent—10 days.
(8) 2-month 1 per cent—10 days; 1 per cent—10 days; 1 per cent—10 days.

Names of Army Air Stations

The following list is of flying fields established by the U. S. Air Service before and during the World War. On November 1, 1918, some were used as storage depots and others had been discontinued.

The majority of these were named after flying officers who have been killed in line of duty, while flying. Unless otherwise mentioned the fields are in memory of those who met death in flight. Other fields were named after patrons and possessors of aeroplanes.

NAME OF FIELD	LOCATION	NAMED FOR	DATE OF DEATH
Barton	Evansville, Tex.	Cadet Robert J. Barton	29 Aug., 1917
Belling (*)	American, D. C.	Col. Edward C. Belling	29 March, 1909
Bendler	Channah, L. I., N. Y.	Maj. Oscar A. Bendler	2 May, 1918
Brooks	San Antonio, Tex.	Cadet R. J. Brooks	13 Nov., 1919
Call	Wichita Falls, Tex.	1st Lt. Lewis H. Call	8 July, 1913
Camp Dick	Del Rio, Tex.	Cadet Sam. F. Dick, Jr.	6 Jan., 1918
Carleton	Aradito, Fla.	Victor Carleton	9 May, 1917
Caruthers	Sanbrook, Tex.	Cadet W. Kerne Caruthers	18 June, 1918
Chandler	Essexville, Pa.	2d Lt. Rex Chandler	5 Apr., 1919
Charnett (*)	Bloomington, Ill.	Ottavo Charnett	24 Nov., 1919
Chapman	Wink, Fla.	Victor Chapman	21 June, 1916
Clark	Philippine Islands	Maj. Harold M. Clark	21 May, 1919
Crispy	San Francisco, Cal.	Maj. Oscar H. Crispy	8 Oct., 1916
Davis	Bahama, L. I., N. Y.	1st Lt. Henry J. Davis	2 May, 1918
Deer	Aradito, Fla.	Pvt. S. H. Deer	17 Aug., 1917
East (*)	Okeechobee, Fla.	Maj. Whitaker J. East	2 Oct., 1918
Edwards	Louisa, Ark.	1st Lt. Melburn Edwards	16 May, 1917
Ellington	Houston, Tex.	2d Lt. E. L. Ellington	24 Nov., 1919
Emerson	Columbia, S. C.	1st W. K. B. Emerson	14 May, 1919
Florence (*)	St. Omaha, Neb.	Florence Kober	24 April, 1918
France	Grand Rapids	1st Lt. Howard J. France	21 Dec., 1916
Gentner	Lebo, Okla., La.	Sgt. L. E. Gentner	28 Sept., 1919
Graham	Scranton, Ky.	1st Lt. Louis K. Graham	11 June, 1919
Hammons	Waco, Tex., L. I., N. Y.	1st Lt. L. W. Hammons Jr.	16 June, 1918
Hartland	San Antonio, Tex.	Maj. O. M. E. Kelly	10 May, 1917
Laugher (*)	Thompson, Va.	Post. Samuel F. Laugher	27 Feb., 1906
Love	Del Rio, Tex.	1st Lt. Ross L. Love	4 Sept., 1919
McCarthy	Waco, Tex., L. I., N. Y.	Maj. Harold V. McCarthy	10 May, 1918
Lake	Paul Harbor, Ill. Y.	1st Lt. Frank Lake	28 Sept., 1919
March	Hammond, Cal.	2d Lt. Peyton C. March	13 Feb., 1918
McIntosh	San Diego, Calif.	1st Lt. Carl McIntosh	30 Jan., 1918
Minshall	Minneapolis, Minn.	Capt. James E. Miller	6 March, 1918
McCook (*)	Dayton, Ohio	Maj. John P. Mitchell	8 July, 1918
Paik	Washington, Pa.	Fighting McCook	5 May, 1919
Payne	West Point, Miss.	1st Lt. Roy D. Payne	1 Feb., 1919
Pope	Austin, Tex.	Cadet Eugene D. Pope	21 May, 1918
Pope	Fayetteville, N. C.	1st Lt. Harlan H. Pope	7 Jan., 1918
Post	Fort Hill, Ohio	2d Lt. Henry B. Post	9 Feb., 1919
Ryan	San Diego, Cal.	Maj. Wm. R. Ryan	24 Aug., 1918
Rich	Waco, Tex.	2d Lt. Percy G. Rich	13 Nov., 1919
Rockwell	San Diego, Cal.	2d Lt. Lewis G. Rockwell	28 Sept., 1919
Rosenfeld	Minneapolis, L. I., N. Y.	1st Lt. Joseph Rosenfeld	15 July, 1918
Ross	Aradito, Cal.	1st Lt. Ross J. Ross	28 Sept., 1918
Scott	Del Rio, Ill.	Capt. Frank S. Scott	28 Sept., 1912
Seabridge	St. Charles, Mich.	1st Lt. Thos. R. Seabridge	17 Sept., 1918
South (*)	American, Tex.	Maj. Henry South	Aug., 1917
Takelore	El Paso, Tex.	1st Lt. W. N. Takelore	11 Oct., 1915
Taylor	Montgomery, Ala.	Capt. Ralph L. Taylor	2 Aug., 1917
Valentine	La Bala, Tex.	2d Lt. Herman W. Valentine	4 May, 1918
Wilbur Wright (*)	Fairfield, O.	Wilbur Wright	30 May, 1912

(*) Col. Belling was killed by the enemy in France while in his motor car.

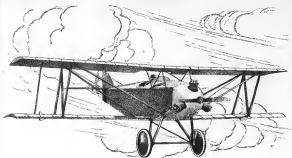
(*) Victor Chapman was a civilian instructor in the supply of the Army and was killed while flying in the supply of the Army.

(*) George Graham was an aviation instructor in the supply of the Army and was killed while flying in the supply of the Army.

(*) Col. Belling was killed by the enemy in France while in his motor car.

(*) Victor Chapman was a civilian instructor in the supply of the Army and was killed while flying in the supply of the Army.

(*) George Graham was an aviation instructor in the supply of the Army and was killed while flying in the supply of the Army.



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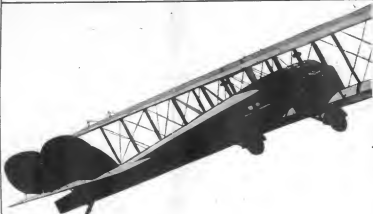
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